

Amendments to Claims

The listing of claims will replace the previous version, and the listing of claims:

Listing of Claims

1. (currently amended) A coating liquid for forming an amorphous silica-based coating film with a low dielectric constant ~~having a high film strength and excellent hydrophobic property and capable of ensuring smoothness of a surface coated therewith, on a substrate, said coating liquid comprising:~~

~~wherein the coating liquid contains tetraalkyl ammonium hydroxide (TAAOH) purified to remove impurities comprising compounds of alkali metal elements and halogen group elements, and~~

~~a silicon compound obtained by hydrolyzing tetraalkyl ortho silicate (TAOS) and alkoxy silane (AS) expressed represented by the following general formula (I) in the presence of the purified tetraalkyl ammonium hydroxide (TAAOH) without containing impurities comprising compounds of alkali metal elements and halogen group elements, a molar ratio of TAOS:AS being in a range of 6/4 to 2/8 and a molar ratio of TAAOH:(TAOS+AS) being in a range of 1/10 to 7/10, and~~

said purified tetraalkyl ammonium hydroxide (TAAOH),



wherein X indicates a hydrogen atom, a fluorine atom, or an alkyl group, a fluorine-substituted alkyl group, an aryl group or a vinyl group each having 1 to 8 carbon atoms; R indicates a hydrogen atom, or an alkyl group, an aryl group or a vinyl group each having 1 to 8 carbon atoms; and n is an integral number from 1 to 3.

2. (currently amended) A coating liquid for forming an amorphous silica-based coating film with a low dielectric constant ~~having a~~

~~high film strength and excellent hydrophobic property and capable of ensuring smoothness of a surface coated therewith, on a substrate, said coating liquid comprising:~~

~~wherein the coating liquid contains tetraalkyl ammonium hydroxide (TAAOH) purified to remove impurities comprising compounds of alkali metal elements and halogen group elements, and~~

~~a silicon compound obtained by hydrolyzing or partially hydrolyzing tetraalkyl ortho silicate (TAOS) in the presence of the purified tetraalkyl ammonium hydroxide (TAAOH) without containing impurities comprising compounds of alkali metal elements and halogen group elements, mixing a reaction product with alkoxy silane (AS) expressed represented by the following general formula (I) or a hydrolysate or a partial hydrolysate thereof, and further hydrolyzing all or a portion of a mixture:~~



wherein X indicates a hydrogen atom, a fluorine atom, or an alkyl group, a fluorine-substituted alkyl group, an aryl group or a vinyl group each having 1 to 8 carbon atoms; R indicates a hydrogen atom, or an alkyl group, an aryl group or a vinyl group each having 1 to 8 carbon atoms; and n is an integral number from 1 to 3.

3. (previously presented) The coating liquid for forming a silica-based coating film with a low dielectric constant according to claim 1, wherein said tetraalkyl ortho silicate (TAOS) is tetraethyl ortho silicate (TEOS), tetramethyl ortho silicate (TMOS) or a mixture thereof.

4. (previously presented) The coating liquid for forming a silica-based coating film with a low dielectric constant according to claim 1, wherein said alkoxy silane (AS) is methyltrimethoxy silane (MTMS), methyltriethoxy silane (MTES) or a mixture thereof.

5. (previously presented) The coating liquid for forming a silica-based coating film with a low dielectric constant according to claim 1, wherein said tetraalkyl ammonium hydroxide (TAAOH) is tetrapropyl ammonium hydroxide (TPAOH), tetrabutyl ammonium hydroxide (TBAOH) or a mixture thereof.

6. (currently amended) The coating liquid for forming a silica-based coating film with a low dielectric constant according to claim 1, wherein a content of impurities comprising compounds of alkali metal elements ~~such as~~ including sodium (Na) and potassium (K) in said tetraalkyl ammonium hydroxide (TAAOH) is 50 ppb by weight or below on respective element bases.

7. (currently amended) The coating liquid for forming a silica-based coating film with a low dielectric constant according to claim 1, wherein a content of impurities comprising compounds of halogen group elements ~~such as~~ including bromine (Br) and chlorine (Cl) in said tetraalkyl ammonium hydroxide (TAAOH) is 1 ppm by weight or less on respective element bases.

8-9. (canceled)

10. (previously presented) The coating liquid for forming a silica-based coating film with a low dielectric constant according to claim 1, wherein the coating liquid contains a silicon compound as a hydrolysate of said tetraalkyl ortho silicate (TAOS) and said alkoxy silane (AS) by 2 to 40% by weight.

11-28. (canceled)

29. (previously presented) The coating liquid for forming a silica-based coating film with a low dielectric constant according to claim 2, wherein said tetraalkyl ortho silicate (TAOS) is tetraethyl ortho silicate (TEOS), tetramethyl ortho silicate (TMOS) or a mixture thereof.

30. (previously presented) The coating liquid for forming a silica-based coating film with a low dielectric constant according to claim 2, wherein said alkoxysilane (AS) is methyltrimethoxy silane (MTMS), methyltriethoxy silane (MTES) or a mixture thereof.

31. (previously presented) The coating liquid for forming a silica-based coating film with a low dielectric constant according to claim 2, wherein said tetraalkyl ammonium hydroxide (TAAOH) is tetrapropyl ammonium hydroxide (TPAOH), tetrabutyl ammonium hydroxide (TBAOH) or a mixture thereof.

32 (currently amended) The coating liquid for forming a silica-based coating film with a low dielectric constant according to claim 2, wherein a content of impurities comprising compounds of alkali metal elements ~~such as~~ including sodium (Na) and potassium (K) in said tetraalkyl ammonium hydroxide (TAAOH) is 50 ppb by weight or below on respective element bases.

33. (currently amended) The coating liquid for forming a silica-based coating film with a low dielectric constant according to claim 2, wherein a content of impurities comprising compounds of halogen group elements ~~such as~~ including bromine (Br) and chlorine (Cl) in said tetraalkyl ammonium hydroxide (TAAOH) is 1 ppm by weight or less on respective element bases.

34. (previously presented) The coating liquid for forming a

silica-based coating film with a low dielectric constant according to claim 2, wherein a molar ratio (TAOS/AS) of said tetraalkyl ortho silicate (TAOS) and said alkoxy silane (AS) is in a range from 6/4 to 2/8.

35. (currently amended) The coating liquid for forming a silica-based coating film with a low dielectric constant according to claim 2 34, wherein a molar ratio (TAAOH/(TAOS+AS)) of said tetraalkyl ammonium hydroxide (TAAOH), and the components for forming the silica-based coating film (TAOS+AS) is in a range from 1/10 to 7/10.

36. (previously presented) The coating liquid for forming a silica-based coating film with a low dielectric constant according to claim 2, wherein the coating liquid contains a silicon compound as a hydrolysate of said tetraalkyl ortho silicate (TAOS) and said alkoxy silane (AS) by 2 to 40% by weight.

37. (new) The coating liquid for forming a silica-based coating film with a low dielectric constant according to claim 1, wherein said coating film has a surface roughness of 1 nm or below without forming a zeolitic coating.

38. (new) The coating liquid for forming a silica-based coating film with a low dielectric constant according to claim 2, wherein said coating film has a surface roughness of 1 nm or below without forming a zeolitic coating.